

estimation, can never have taken place beneath the present rectilinear and parallel strata.

Dr. Richardson assumes as a fact, that strata having very strong resemblance were once continuous, however interrupted we now find them; for instance, the stratified remnants at the tops of the Seafin and Slievegallon, between which the valley of the Mayola is an excavation 1700 feet deep and three miles wide, were originally connected in their present position by similar materials, the whole of which have been completely carried away. And again, to the northward, between Seafin and Carntogher, the same stupendous operations have carried away the parts which formerly connected these undisturbed remains of the same strata.

The number of basaltic hummocks thus left on the tops of various mountains, is represented to be considerable, as if they had been left by the unknown sculptor for the express purpose of showing how high the original surface of the country formerly reached,—a conclusion which appears formidable; but the author does not admit that anything is absurd, incredible, or impossible, in geology and cosmogony.

A Letter on the Differences in the Structure of Calculi, which arise from their being formed in different Parts of the Urinary Passages; and on the Effects that are produced upon them, by the internal Use of solvent Medicines, from Mr. William Brande to Everard Home, Esq. F.R.S. Read May 19, 1808. [Phil. Trans. 1808, p. 223.]

Mr. Brande's observations were made during an examination of the calculi contained in the Hunterian Museum, and of some also in the possession of Mr. Home.

Three calculi, formed in the kidneys, were examined. One consisted of uric acid, nearly pure; another, weighing seven grains, contained $4\frac{1}{2}$ uric acid, and $2\frac{1}{2}$ animal matter. A third consisted of oxalate of lime; and it is added that a fine powder is also voided from the kidneys, consisting of the ammoniacal phosphate of magnesia, and of phosphate of lime.

Calculi retained in the infundibula, or pelvis of the kidneys, may be increased either by a deposition of uric acid, or may be coated by an external lamina, consisting of the phosphates.

Calculi met with in the bladder, are of four kinds.

1. Formed on nuclei of uric acid, from the kidneys.
2. On nuclei of oxalate of lime, from the kidneys.
3. Formed on sand or mucus deposited in the bladder.
4. Formed on extraneous bodies introduced into the bladder.

Those consisting of uric acid vary in colour, from a deep reddish brown to a pale yellowish brown. Those containing phosphate of lime, and the triple phosphate of magnesia, are whiter, and are often soft and friable. Those which contain oxalate of lime, called mulberry calculi, are browner, harder, and less soluble.

Out of 150 examined by Mr. Brande,
16 were composed of uric acid.

45 principally uric acid, with a small proportion of the phosphates.
 66 principally phosphates, but containing a small quantity of uric acid.

12 phosphates only.

5 uric acid, and phosphates on a nucleus of oxalate of lime.

6 chiefly oxalate of lime.

It is observed by Mr. Brande, that calculi from the bladder, consisting of uric acid, contain a larger proportion of animal matter combined with it, than is usually found in kidney-calculi. One calculus, weighing twenty-five grains, being digested for two hours in water, lost $5\frac{1}{2}$ grains, which were found, after evaporation of the water, to be principally urea, combined with some muriate of ammonia, and a little of the triple phosphate of magnesia.

Sixty grains of another calculus also yielded 5·2 of urea to alcohol; and being afterwards treated with acetic acid, they lost six more grains by solution of triple phosphate, and the remaining 48·8 were pure uric acid. It is observed, that the presence of the triple phosphate along with uric acid, would occasion all the phenomena that have been ascribed to a supposed urate of ammonia.

Of Calculi from other animals, examined by Mr. Brande.—One from the kidney of a horse contained 76 phosphate of lime, 22 carbonate of lime: another from the bladder of a horse, 45 phosphate of lime, 28 triple phosphate of magnesia, 10 carbonate of lime, and 15 animal matter.

Calculi from the bladder of an ox were found to be carbonate of lime with animal matter.

A calculus from a sheep's kidney contained 72 phosphate of lime, 20 carbonate of lime, and 8 animal matter.

The sediment from the urine of a rhinoceros was principally carbonate of lime, with a small proportion of phosphate of lime.

A large calculus, from the bladder of an old dog, contained 64 phosphate of lime, 30 ammoniacal phosphate of magnesia, and 6 of animal matter.

A calculus from a hog's bladder was principally carbonate of lime.

One from a rabbit contained phosphate of lime, and carbonate of lime, nearly in equal quantities.

Because of the difficulty of accounting for the formation of oxalate of lime, Mr. Brande has frequently examined the urine of calculous patients, but has never been able to detect it, either there or in healthy urine.

With respect to the use of solvents, it is observed, that those which have been recommended, under different circumstances, are of two kinds, acid or alkaline, opposite in their nature to each other, and accordingly each liable to occasion whatever the other is adapted to remove. The alkalies may prevent the formation of uric calculi, but will increase the disposition to form the phosphates. So also the acid, which dissolves the earthy phosphates, will at least have no action upon a nucleus of uric acid, and may occasion it to be increased by a fresh deposition.